

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An isolated polypeptide having the sequence of DSP-11 recited in SEQ ID NO:2, or a variant thereof that differs in one or more amino acid deletions, additions, insertions or substitutions at no more than 5025% of the residues in SEQ ID NO:2, such that the polypeptide retains the ability to dephosphorylate an activated MAP-kinase.

2.-9. (Canceled)

10. (Currently Amended) An antisense polynucleotide comprising ~~at least 15 consecutive nucleotides complementary to a polynucleotide according to claim 6.~~ a nucleotide sequence that is complementary to a DSP-11 polynucleotide which encodes a DSP-11 polypeptide capable of dephosphorylating an activated MAP-kinase, said DSP-11 polynucleotide comprising a sequence at least 80% identical to a polynucleotide that encodes a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:2.

11.-14. (Canceled)

15. (Original) An isolated antibody, or antigen binding fragment thereof, that specifically binds to a DSP-11 polypeptide having the sequence of SEQ ID NO:2.

16. (Original) An antibody or fragment thereof according to claim 15, wherein the antibody is a monoclonal antibody.

17. (Original) A pharmaceutical composition comprising an antibody or fragment thereof according to claim 15 in combination with a physiologically acceptable carrier.

18. (Original) A method for detecting DSP-11 expression in a sample, comprising:

(a) contacting a sample with an antibody or an antigen-binding fragment thereof according to claim 15, under conditions and for a time sufficient to allow formation of an antibody/DSP-11 complex; and

(b) detecting the level of antibody/DSP-11 complex, and therefrom detecting the presence of DSP-11 in a sample.

19. (Original) A method according to claim 18, wherein the antibody is linked to a support material.

20. (Original) A method according to claim 18, wherein the antibody is linked to a detectable marker.

21. (Original) A method according to claim 18, wherein the sample is a biological sample obtained from a patient.

22. (Currently Amended) A method for detecting DSP-11 expression in a sample, comprising:

(a) contacting a sample with an antisense polynucleotide according to claim 10 or claim 11; and

(b) detecting in the sample an amount of DSP-11 polynucleotide that hybridizes to the antisense polynucleotide, and therefrom detecting DSP-11 expression in the sample.

23. (Original) A method according to claim 22, wherein the amount of DSP-11 polynucleotide that hybridizes to the antisense polynucleotide is determined using polymerase chain reaction.

24. (Original) A method according to claim 22, wherein the amount of DSP-11 polynucleotide that hybridizes to the antisense polynucleotide is determined using a hybridization assay.

25. (Original) A method according to claim 22, wherein the sample comprises an RNA or cDNA preparation.

26. (Original) A method for screening for an agent that modulates DSP-11 activity, comprising the steps of:

(a) contacting a candidate agent with a polypeptide according to claim 1, under conditions and for a time sufficient to permit interaction between the polypeptide and candidate agent; and

(b) subsequently evaluating the ability of the polypeptide to dephosphorylate a DSP-11 substrate, relative to a predetermined ability of the polypeptide to dephosphorylate the DSP-11 substrate in the absence of candidate agent;

and therefrom identifying an agent that modulates DSP-11 activity.

27. (Original) A method according to claim 26, wherein the DSP-11 substrate is a MAP-kinase.

28. (Original) A method according to claim 26, wherein the candidate agent is a small molecule.

29. (Original) A method according to claim 26, wherein the small molecule is present within a combinatorial library.

30. (Original) A method for screening for an agent that modulates DSP-11 activity, comprising the steps of:

(a) contacting a candidate agent with a cell comprising a DSP-11 promoter operably linked to a polynucleotide encoding a detectable transcript or protein, under conditions and for a time sufficient to permit interaction between the promoter and candidate agent; and

(b) subsequently evaluating the expression of the polynucleotide, relative to a predetermined level of expression in the absence of candidate agent;

and therefrom identifying an agent that modulates DSP-11 activity.

31. (Original) A method according to claim 30, wherein the polynucleotide encodes a DSP-11 polypeptide.

32. (Original) A method according to claim 30, wherein the polynucleotide encodes a reporter protein.

33. (Original) A method for modulating a proliferative response in a cell, comprising contacting a cell with an agent that modulates DSP-11 activity.

34. (Original) A method for modulating differentiation of a cell, comprising contacting a cell with an agent that modulates DSP-11 activity.

35. (Original) A method for modulating survival of a cell, comprising contacting a cell with an agent that modulates DSP-11 activity.

36. (Original) A method according to any one of claims 33-35, wherein the agent modulates a pattern of gene expression.

37. (Original) A method according to any one of claims 33-35, wherein the cell displays contact inhibition of cell growth.

38. (Original) A method according to any one of claims 33-35, wherein the cell displays anchorage independent growth.

39. (Original) A method according to any one of claims 33-35, wherein the cell displays an altered intercellular adhesion property.

40. (Original) A method according to claim 35, wherein the agent modulates apoptosis.

41. (Original) A method according to claim 35, wherein the agent modulates the cell cycle.

42. (Original) A method according to claim 32, wherein the cell is present within a patient.

43. (Original) A method for treating a patient afflicted with a disorder associated with DSP-11 activity, comprising administering to a patient a therapeutically effective amount of an agent that modulates DSP-11 activity.

44. (Original) A method according to claim 43, wherein the disorder is selected from the group consisting of Duchenne muscular dystrophy, cancer, graft-versus-host disease, autoimmune diseases, allergies, metabolic diseases, abnormal cell growth, abnormal cell proliferation and cell cycle abnormalities.

45. (Currently Amended) A DSP-11 substrate trapping mutant polypeptide that differs from the sequence recited in SEQ ID NO:2 in one or more amino acid deletions, additions, insertions or substitutions at no more than ~~50~~25% of the residues in SEQ ID NO:2, such that the polypeptide binds to a substrate with an affinity that is not substantially diminished

relative to DSP-11, and such that the ability of the polypeptide to dephosphorylate a substrate is reduced relative to DSP-11.

46. (Original) A substrate trapping mutant polypeptide according to claim 45, wherein the polypeptide contains a substitution at position 65 or position 95 of SEQ ID NO:2.

47. (Original) A method for screening a molecule for the ability to interact with DSP-11, comprising the steps of:

(a) contacting a candidate molecule with a polypeptide according to claim 1 under conditions and for a time sufficient to permit the candidate molecule and polypeptide to interact; and

(b) detecting the presence or absence of binding of the candidate molecule to the polypeptide, and therefrom determining whether the candidate molecule interacts with DSP-11.

48. (Original) A method according to claim 47, wherein the step of detecting comprises an affinity purification step.

49. (Original) A method according to claim 47, wherein the step of detecting comprises a yeast two hybrid screen or a screen of a phage display library.

50. (New) An isolated polypeptide that is encoded by a polynucleotide which encodes a polypeptide capable of dephosphorylating an activated MAP-kinase, said polynucleotide comprising a sequence at least 80% identical to a polynucleotide that encodes a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:2.

51. (New) An isolated polypeptide that is encoded by a polynucleotide which encodes a polypeptide capable of dephosphorylating an activated MAP-kinase, said

polynucleotide comprising a sequence at least 90% identical to a polynucleotide that encodes a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:2.

52. (New) An isolated polypeptide that is encoded by a polynucleotide which encodes a polypeptide capable of dephosphorylating an activated MAP-kinase, said polypeptide comprising an amino acid sequence of SEQ ID NO:2, wherein an aspartic acid is located at position 65 and the peptide sequence VGVHICALGFGRTGTMLACYLV (SEQ ID NO:3) is located at positions 91 through 111 of SEQ ID NO:2, wherein said polynucleotide comprises a sequence at least 80% identical to a polynucleotide that encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2.

53. (New) An expression vector comprising a polynucleotide according to claim 51 or 52.